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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT: M. Jakobsen et al.

SERIAL NO.: 10/032,381

FILED: October 25, 2001

FOR: CLOSED SUBSTRATE PLATFORMS SUITABLE FOR ANALYSIS OF BIOMOLECULES

THE HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS  
WASHINGTON, DC 20231

SIR:

## **PRELIMINARY AMENDMENT**

Please amend the above-identified application as follows.

## IN THE CLAIMS

Please cancel without prejudice claims 9-26; 30-82; 84-87; 91-97; and 99-101.

83. (amended) A method for identifying a nucleic acid sequence capable of binding to a biomolecule comprising:

immobilizing each unique nucleic acid sequence from a library of nucleic acid sequences onto the substrate platform of claim 1 [claims 1, 27 through to 29],

optionally washing the substrate platform to remove contaminants,

incubating the immobilized nucleic acid sequences with a biomolecule under conditions which are conducive to specific interaction between the biomolecule and the nucleic acid sequences,

optionally washing the substrate platform to remove any non-specifically bound biomolecules,

detecting the location of the nucleic acid sequences which are bound to the biomolecule.

88. A method for identifying a polypeptide capable of binding a biomolecule comprising:

immobilizing each unique polypeptide from a library of polypeptides onto the substrate platform of claim 1 [claims 1, 27 through to 29],

optionally washing the substrate platform to remove contaminants,

incubating the immobilized polypeptides with a biomolecule under conditions which are conducive to specific interaction between the biomolecule and the polypeptides,

optionally washing the substrate platform to remove any non-specifically bound biomolecules,

detecting the location of the polypeptides which bound to the biomolecule.

98. (amended) A method for sample analysis comprising:

applying a sample to the substrate platform of claim 1 [claims 1, 27 and 29]; and evaluating the sample.

102. A method for producing the substrate platform of claim 1 [any one of claims 1, 27 through to 29]; wherein,

the slide is comprised of a bottom surface plastic structure, and

the top surface of the slide is comprised of a thin plastic film or laminate;

wherein said film or laminate is placed over the bottom part of the slide and sealed using heat or adhesive following by physical pressure to ensure tight airtight sealing and prevent any liquid or gas from escaping through the seal.

Please add the following new claims.

103. A closed substrate platform for analysis of biomolecules comprising:

an enclosed analysis platform, the analysis platform comprising a microfluidic system

and an area for sample analysis,

the analysis platform comprising (i) at least one inlet for the introduction of fluid to the microfluidic system and (ii) an outlet for removal of fluid from the microfluidic system;  
a vent for expulsion of air from the analysis platform,  
the sample analysis area comprising one or more biomolecules.

104. The substrate platform of claim 103 wherein the substrate platform comprises a flow restrictor such that a fluid sample is distributed evenly through the analysis area upon flow of fluid through the microfluidic system.

105. The substrate platform of claim 103 wherein a buffer chamber is after the sample analysis area, and a waste area is after the buffer chamber, the waste area comprising the vent.

106. The substrate platform of claim 103 wherein the sample analysis area comprises one or more nucleic acid compounds or peptide compounds.

107. A closed substrate platform comprising:  
an enclosed analysis platform, the analysis platform comprising a microfluidic system and a sample analysis area,  
the analysis platform comprising (i) at least one inlet for the introduction of fluid to the sample analysis area and (ii) an outlet for removal of fluid from the sample analysis area,  
the analysis platform comprising a bottom part and a top part adhered together;  
a vent for expulsion of air from the analysis platform.

108. The substrate platform of claim 107 wherein the top and bottom parts are adhered together with an adhesive.

109. The substrate platform of claim 107 wherein the top part is a plastic member.

110. The substrate platform of claim 107 wherein the microfluidic system comprises a meandering flow path.

111. The substrate platform of claim 107 wherein the sample analysis area comprises one or more biomolecules.

112. The substrate platform of claim 107 wherein the sample analysis area comprises one or more nucleic acid compounds or peptide compounds.

#### REMARKS

For the sole purpose of reducing initial claims fees, claims 9-26, 30-82, 84-87, 91-97, and 99-101 have been canceled without prejudice, and claims 83, 88, 98 and 102 have been amended. Applicants expressly reserve all rights to prosecute the subject matter of those cancelled and amended claims, either in the present application or suitable continuing application.

Claims 103-112 also have been added. No new matter has been added by virtue of those new claims. For instance, support for the new claims appears e.g. at pages 305, the original claims and the drawings of the application.

Early consideration and allowance of the application are earnestly solicited.

Respectfully submitted,



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